Logic Modeling, Performance Measurement and Program Evaluation: A Primer for Managers

Presented by:

Evaluation Support Division

National Center for Environmental Innovation

Office of Policy, Economics and Innovation

U.S. Environmental Protection Agency

Presentation Goals

- Enable managers to see how logic modeling, measurement and evaluation are valuable tools that can be used to improve their programs and communicate performance and progress to state leadership and other stakeholders

- Provide managers with a brief overview of the drivers, definitions, perspectives, benefits and steps involved in developing performance measures and conducting a program evaluation

- Identify bridges and barriers to utilizing measurement and evaluation

Session Agenda

- Module 1: Drivers for Performance Measurement and Program Evaluation *(Why you should care)*
- Module 2: The Logic Model (*Understanding your Program in preparation for measurement and evaluation)*
- Module 3: Performance Measurement and Program Evaluation (*Definitions and perspectives – Building a Common Understanding)*
- Module 4: Steps and Tools for Developing Measures and Conducting an Evaluation and *(Things you should know)*

Drivers for Performance Measurement & Program Evaluation

(Why you should care)

Drivers for Performance Measurement and Program Evaluation

- Good Program Management.
- Government Performance and Results Act (GPRA) of 1993
  - Requires EPA to report schedules for and summaries of program evaluations that have been or will be conducted and identify those that influence development of the Agency's Strategic Plan.
- OMB's Program Assessment Rating Tool (PART)
  - Tool designed to assess and evaluate programs across the government.
- Environmental Results Order 5700.7
  - Requires EPA grant officers and grant recipients to identify outputs and outcomes from grants and connect them to EPA's strategic plan.
- State Priorities.

Key Questions Managers Need to Answer about their programs

- What am I doing, with whom, to whom/what?
- How well am I doing it?
- Is anybody (anything) better off?
  - Short-term
  - Long-term

- What role, if any, did my program play in the results?
- What role, if any, did the context play?
- Were there any unintended outcomes, if so why?

PERFORMANCE MANAGEMENT TOOLS

PERFORMANCE MANAGEMENT

Performance management includes activities to ensure that goals are consistently being met in an effective and efficient manner. **Performance management tools include logic models, performance measurement and program evaluation.**

Logic Model

Tool/framework that helps identify the program/project resources, activities, outputs customers, and outcomes.

Performance Measurement

Helps you understand ***what*** level of performance is achieved by the program/project.

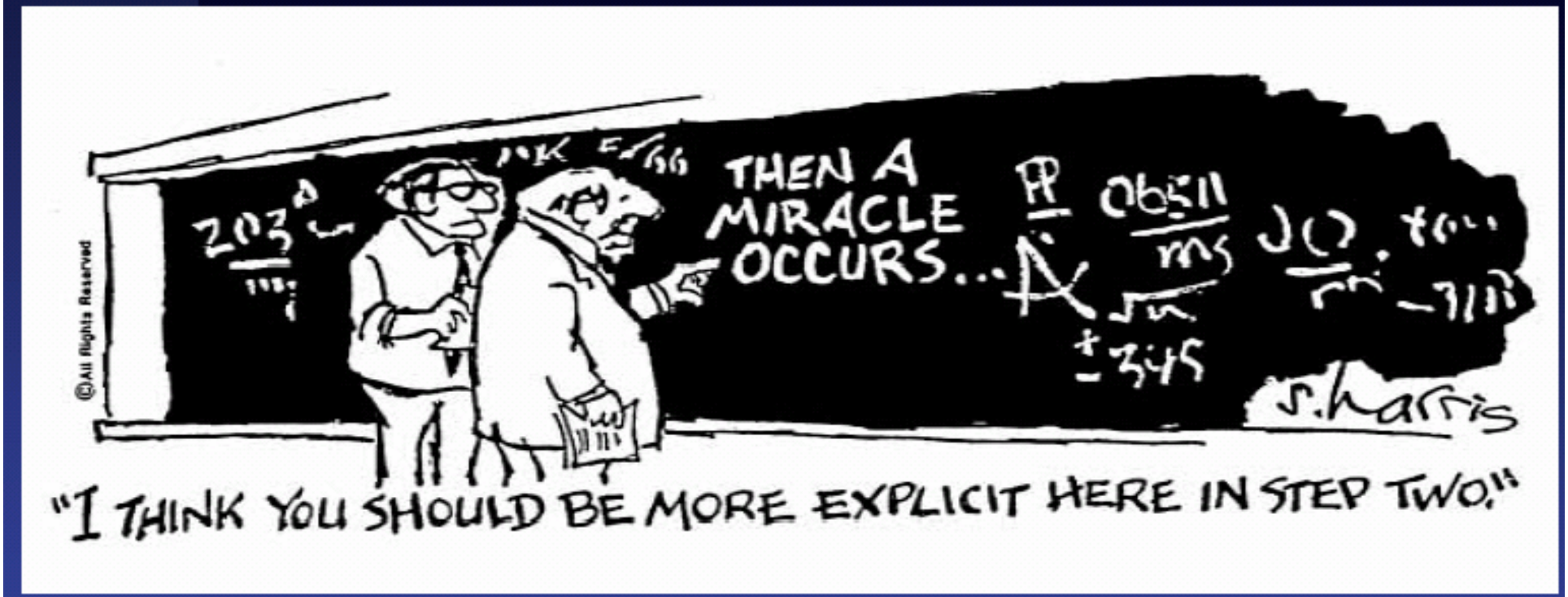
Program Evaluation

Helps you understand and explain ***why*** you're seeing the program/project results.

The Logic Model

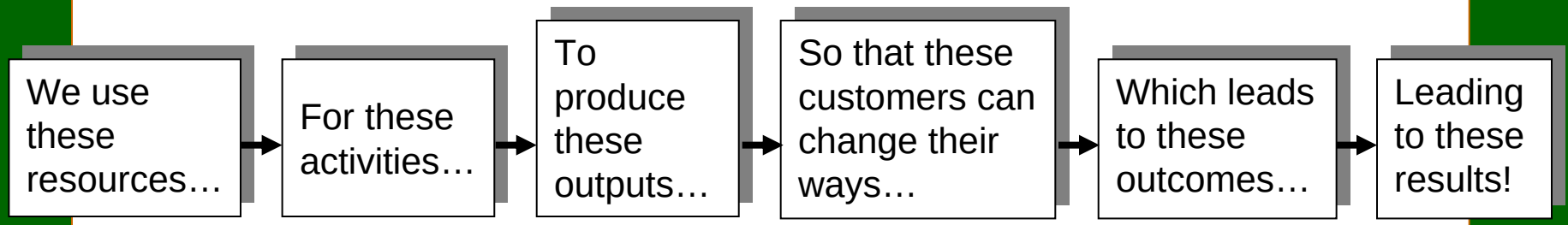
(Understanding your program in preparation for measurement and evaluation)

The Logic Model



What is a Logic Model?

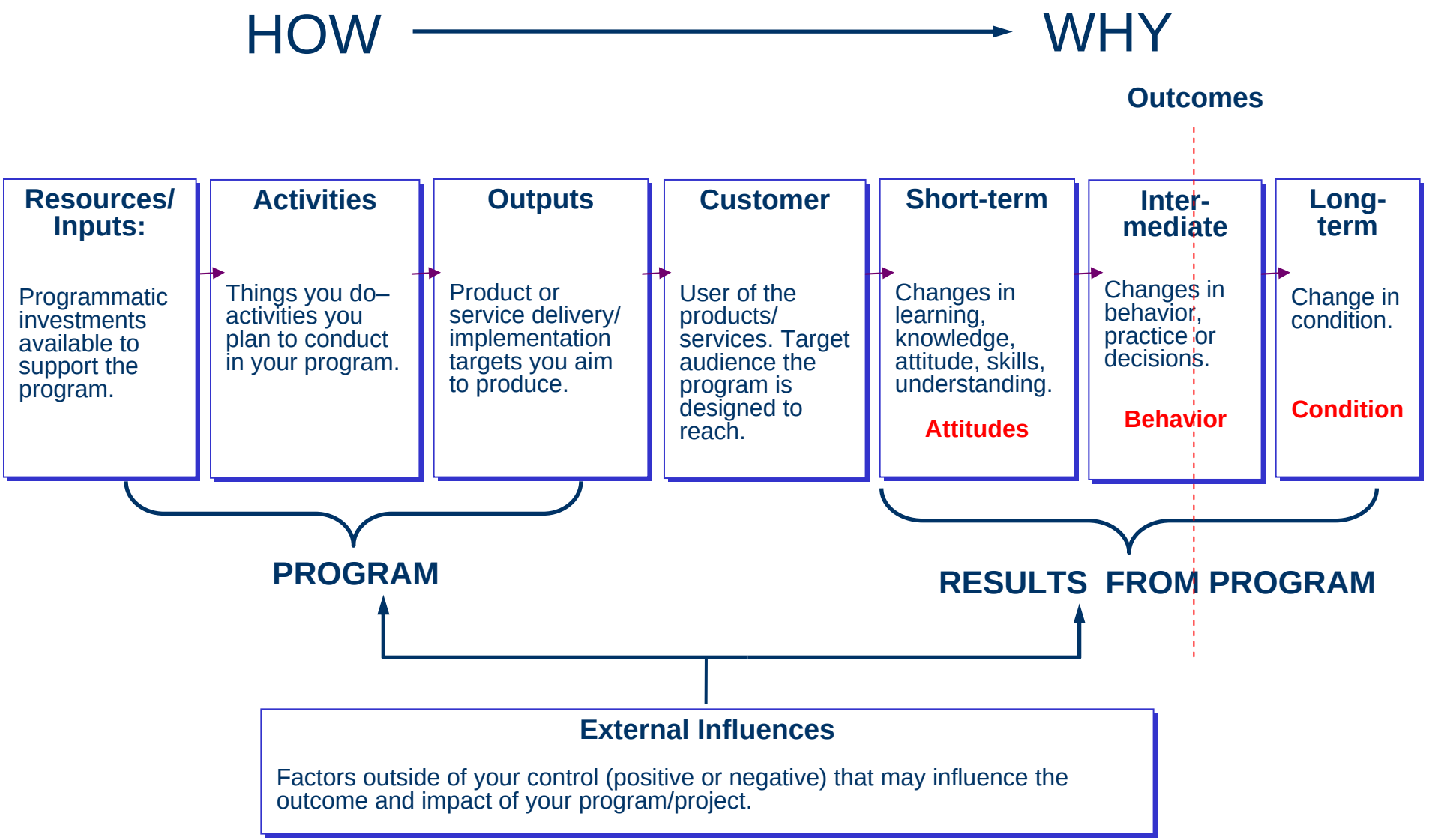
A logic model is a diagram and text that describes/ illustrates the logical (causal) relationships among program elements and the problem to be solved, thus defining measurements of success.



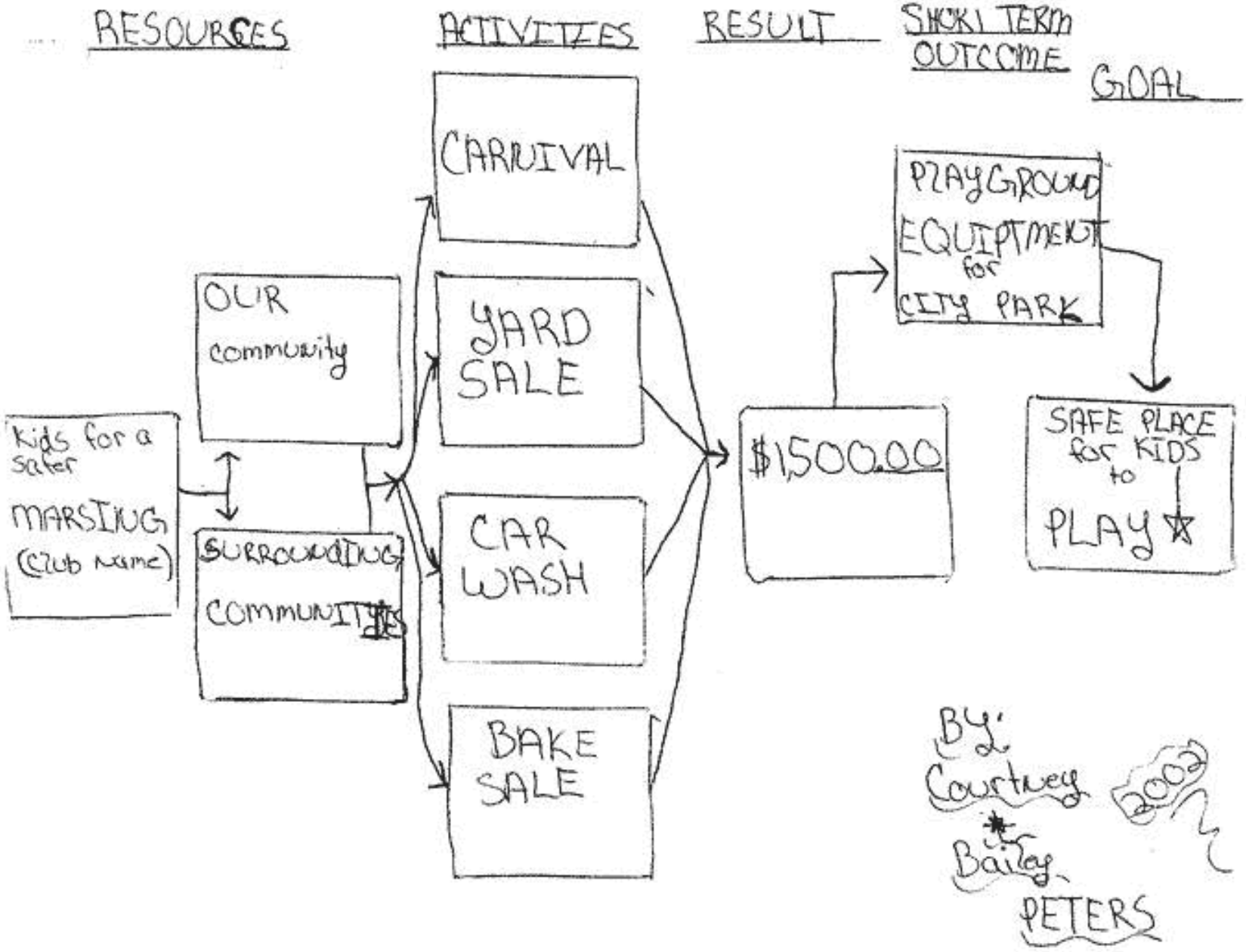
What are Logic Models Used For?

- Staff and managers can use logic models to…
  - Develop program/project design
  - Identify and develop performance measures for their program/project
  - Support strategic planning
  - Communicate the priorities of the program/project

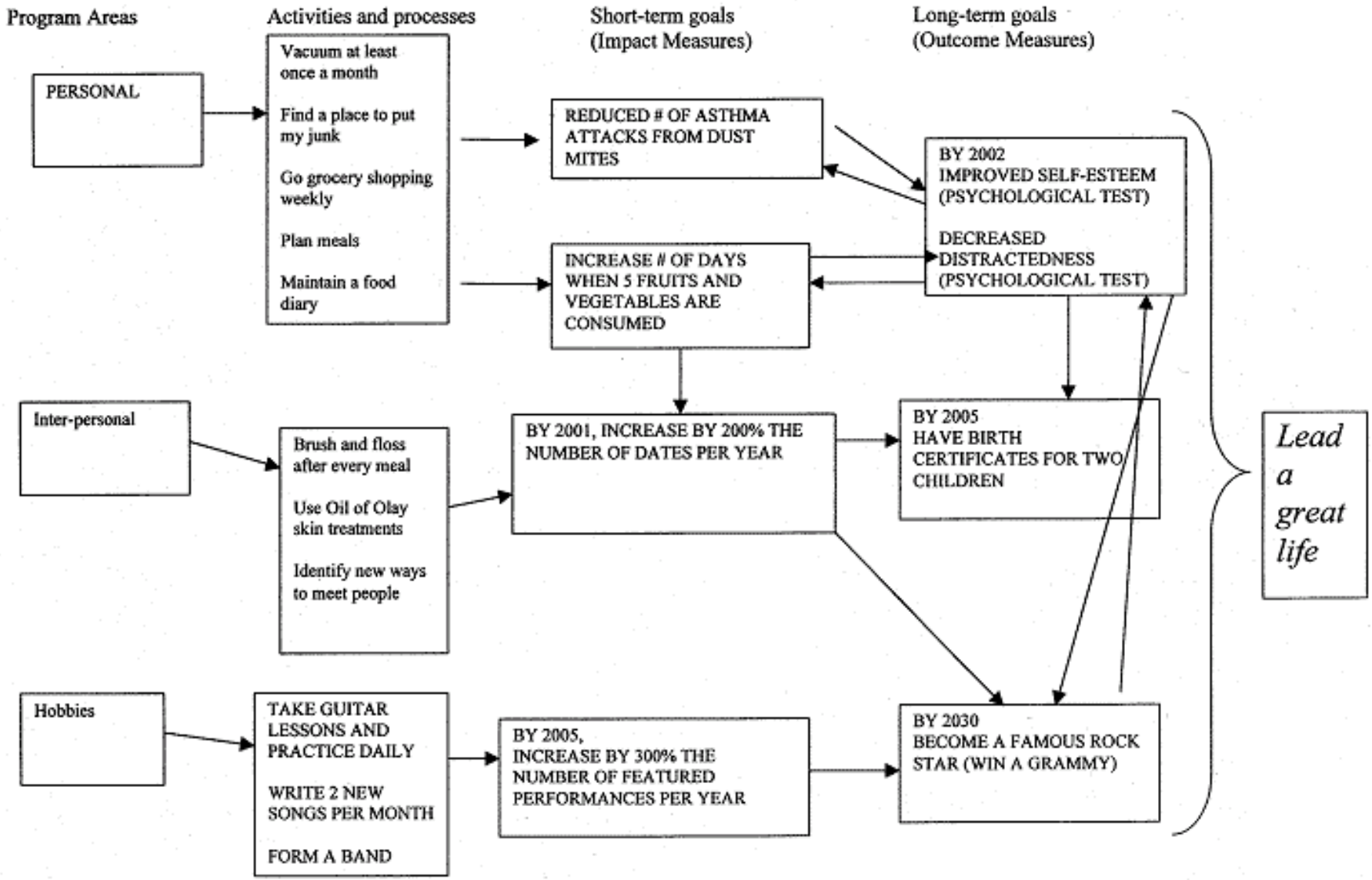
Elements of the Logic Model



Courtney and Bailey Peter's Model: A Safe Place to Play

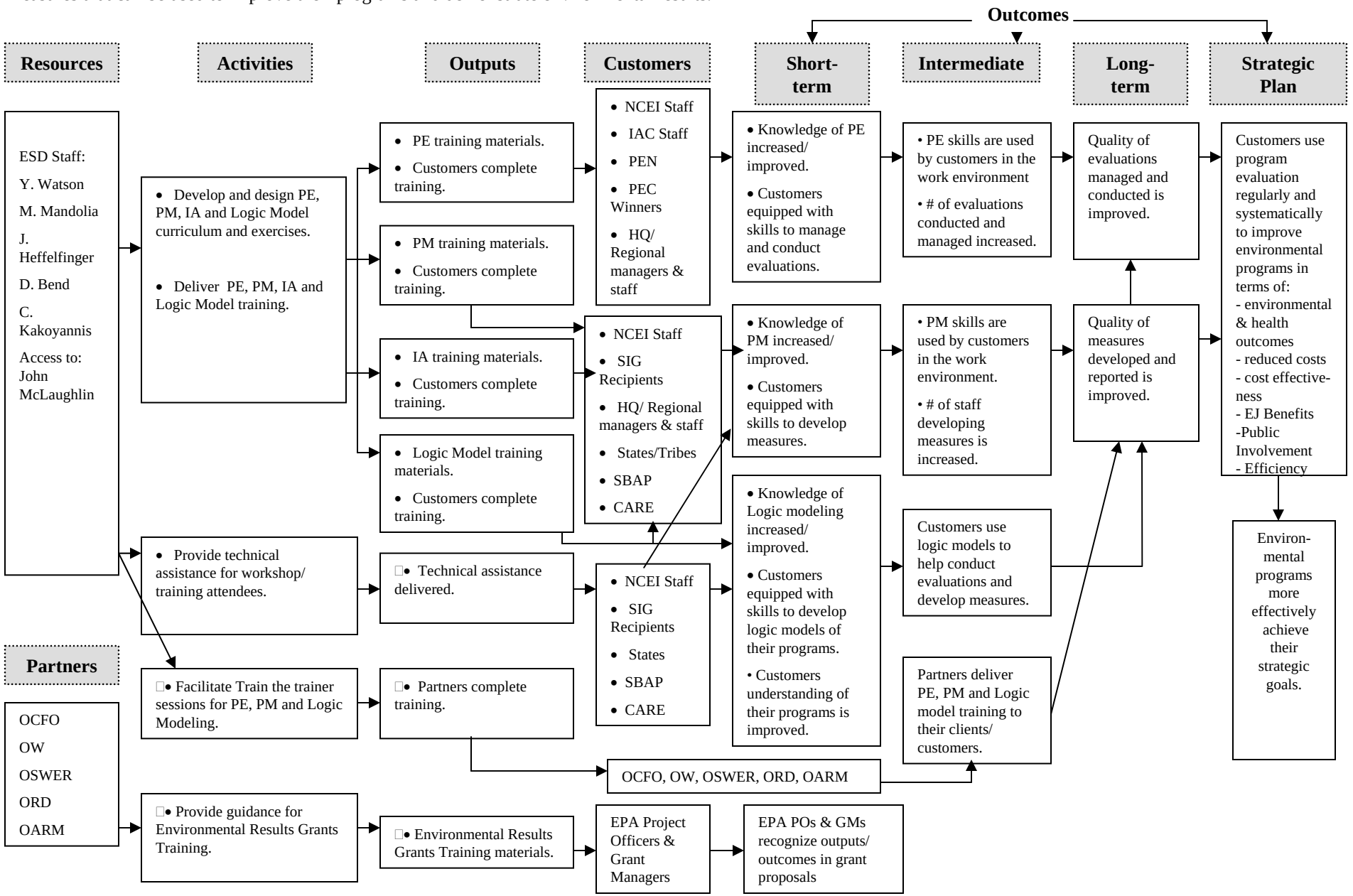


Lead a Great Life



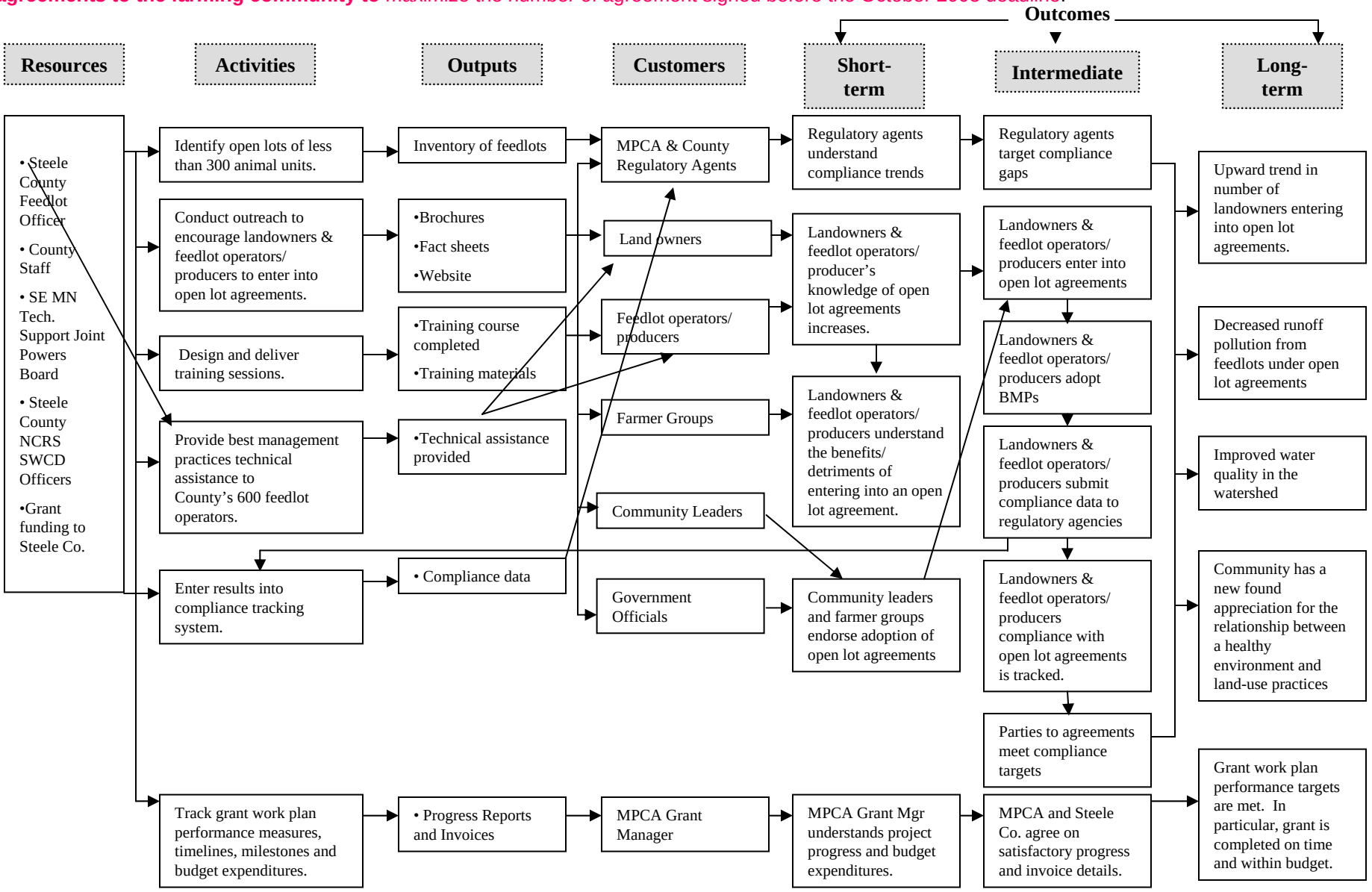
ESD TRAINING LOGIC MODEL

ESD Training Goal: To provide training to enable our EPA partners to more effectively conduct and manage program evaluations and analyses and develop performance measures that can be used to improve their programs and demonstrate environmental results.

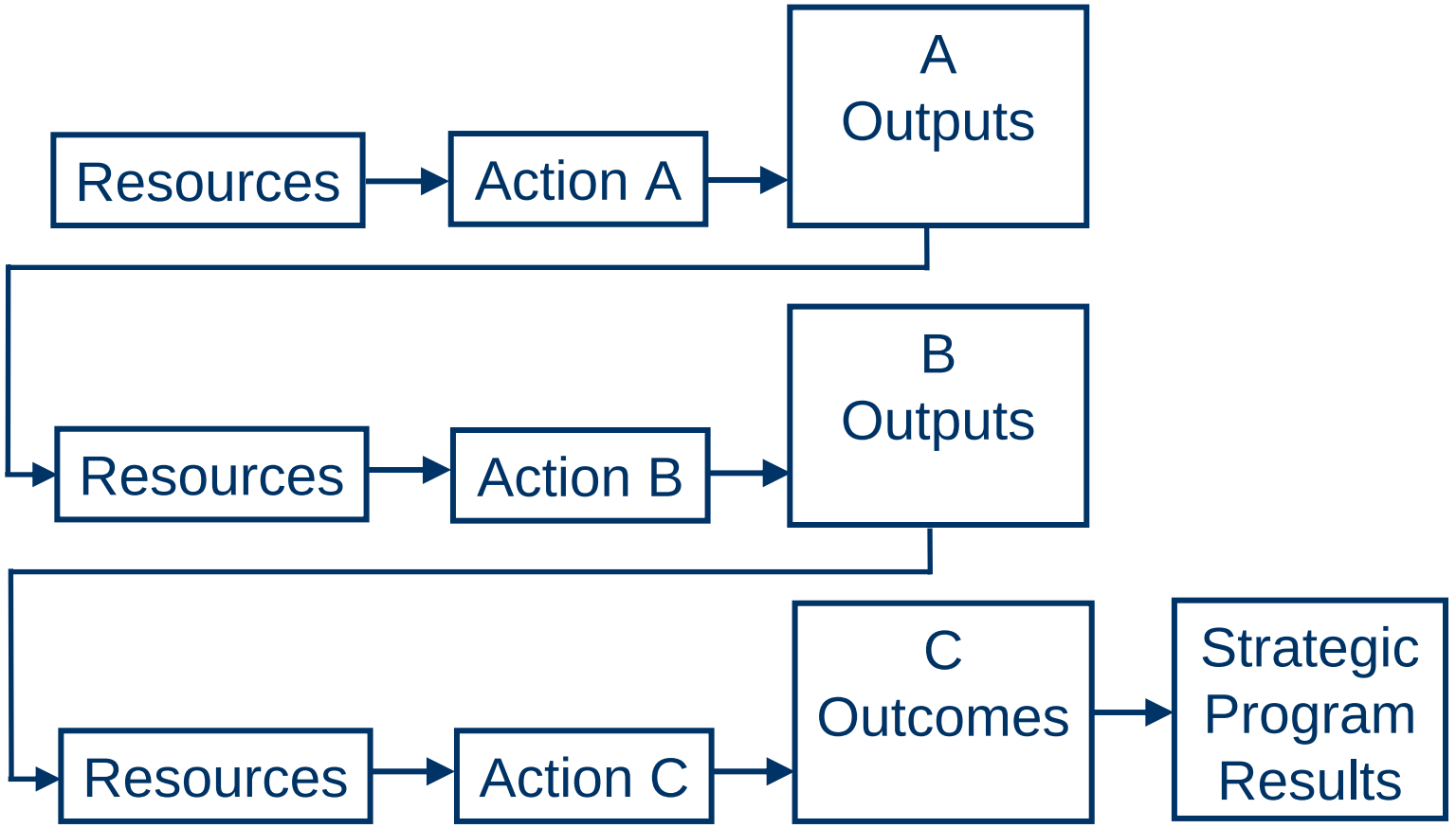


OPEN LOT AGREEMENT LOGIC MODEL

Project Purpose: Feedlots with fewer than 300 animal units which existed before October 23, 2000, and registered by January 2002 are being targeted for inclusion in the new Open Lot Agreement Program, a flexible approach to **correcting runoff problems**. This project will **promote the benefits of the agreements to the farming community to** maximize the number of agreement signed before the October 2005 deadline.



“Z” Logic


Resources
Action A
A
Outputs
Resources
Action B
B
Outputs
Resources
Action C
C
Outcomes
Strategic
Program
Results

Exercise 1:

Developing a Logic Model

Logic Model Exercise

- Think about someone or something you want to change.
  - (Self, Staff member, State Agency, etc.)

1. Why is this change important? To what result will it lead?
2. What aspect of the change do you have direct control over? What else has to happened to enable full realization of the change?
3. Now, develop a Logic Model that will describe how your program will work to achieve the desired change!

Performance Measurement & Program Evaluation

(Definitions and Perspectives - Building a Common Understanding)

Building on Your Logic Model – Preparing for Measurement & Evaluation

- Use the logic model to:
  - Develop performance measures for your program or project
  - Help identify which aspects of a program/project to evaluate

Definitions

Performance Measurement:

The ongoing monitoring and reporting of program progress and accomplishments, using pre-selected performance measures.

Definitions

Program Evaluation:

- A systematic study that uses measurement and analysis to answer specific questions about *how well a program is working to achieve its outcomes and why*.

Differences between Measurement and Evaluation

Performance Measurement

- Ongoing monitoring and reporting of accomplishments.
- Examines achievement of program objectives.
- Describes program achievements in terms of outputs, outcomes in a given time against a pre-established goal.
- Early warning to management.

Program Evaluation

- In-depth, systematic study conducted periodically or on ad-hoc basis.
- Examines broader range of information on program performance than is feasible to monitor on an on-going basis.
- Explains why the results occurred.
- Longer term review of effectiveness.

Relationship between Measurement and Evaluation

- Performance measurement data provides information needed to conduct the evaluation and assess program performance.
- Lack of performance measurement data is a major obstacle to conducting an evaluation.

Orientation/Approaches to Measurement and Evaluation

- Accountability
- Learning & Program Improvement
  - What outcomes have been achieved and why?
  - What aspects of my program lead to these outcomes?
  - What roles did context play in my outcomes?

What can Measurement and Evaluation do for you?

- Increase certainty that program goals & objectives are being met.
- Determine if allocated resources are yielding the greatest environmental benefit.
- Identify what works well, what does not and why.
- Identify program areas that need improvement.

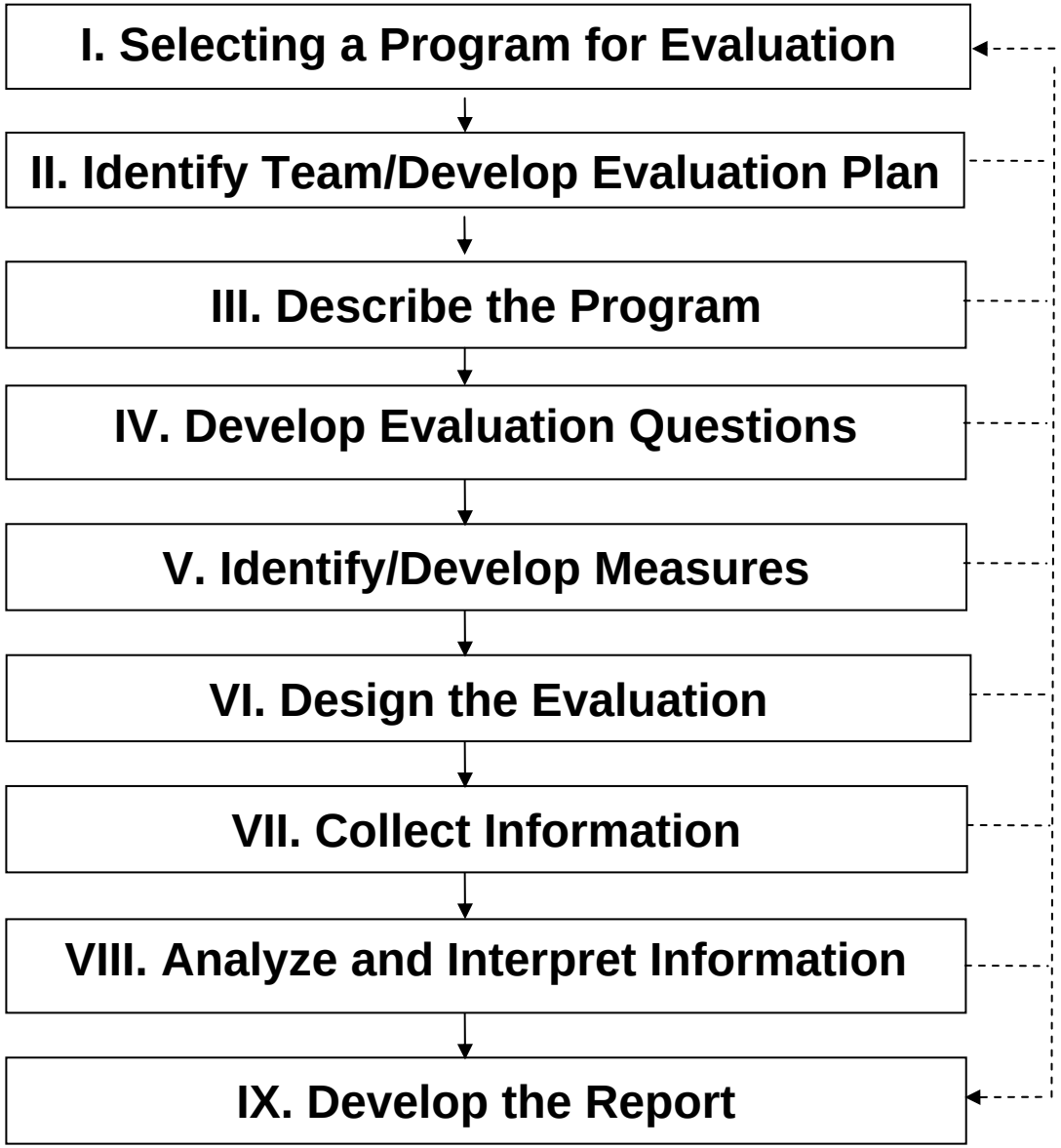
Limitations and Pitfalls of Performance Measures

- Provide descriptive data, not rigorously evaluative.
- Can encourage undesirable behavior.
- May require too much time and effort.
- Can be ignored, not automatically used.
- Performance measurement is time-bound, and context-bound.

Steps and Tools for Developing Performance Measures and Conducting an Evaluation

(Things you should know)

Steps to Identifying Measures and Completing an Evaluation



3 Reasons Why Managers Would Consider Conducting an Evaluation

- Poor level of program performance
- Good performance that needs to be replicated
- Understand unintended results

Selecting a Program/Project to Evaluate

- Can the results of the evaluation influence decisions about the program?
  - Usefulness, Value, Impact
- Can the evaluation be done in time to be useful?
  - Data availability, resources, time needed to conduct the evaluation
- Is the program significant enough to merit evaluation?
  - Program size, resource expenditure, performance, pilot project, managerial support

From: Handbook of Practical Program Evaluation, 1994 and OSWER Program Evaluation Team, Strategy for Identifying, Prioritizing, and Selecting Candidate Programs for Evaluation.

Evaluability Assessment

- Administrators on the policy or operating level are unable or unwilling to change the program on the basis of evaluation information.
- Evaluators and intended users fail to agree on the goals, objectives, side effects, and performance criteria
- Program goals and objectives are found to be unrealistic given the resources *available*
- Relevant information on program performance is not available

Part B. Develop the Measurement/ Evaluation Plan: Things to Consider

- Purpose of the performance measurement system
- Purpose of the evaluation
- Project/ program mission
- Primary audience
- Scope (including program description/ logic model)
- Context (organizational, management, political)
- Role, expectations for program staff, participants, and key stakeholders

Part B. Measurement/Evaluation Plan Outline

- Performance measurement questions
- Evaluation questions
- Evaluation design
- Data collection/analysis
- Reporting (including feedback loop)
- Resources (staff and budget)
- Timeline
- Communication
- Steps to monitor implementation of the plan

Uses for Performance Measurement/Evaluation

- Monitoring and reporting
- Strategic planning
- Budgeting and financial management
- Program management
- Process/program improvement
- Contract management
- Communication:
  - internal/external

Source: Chapel, T., Center for Disease Control and Prevention, Power Point Presentation, Program Alignment, Performance Measurement, and Program Improvement

Types of Data

- Qualitative Data
  - Observations, interviews, document reviews, photographs “descriptions of incidents, actions, processes”
- Quantitative
  - Numerical-- data collection through reports, tests, surveys, existing data bases
- Not a question of either/or, but when to use a method given performance question and context. Using both methods yields the strongest conclusions.

Measures Across the Logic Model Spectrum

Element	Definition	Example Measure
Resources/ Inputs	Measure of resources consumed by the organization.	Amount of funds, # of FTE, materials, equipment, supplies (etc.).
Activities	Measure of work performed that directly produces the core products and services.	# of training classes offered as designed; Hours of technical assistance training for staff.
Outputs	Measure of products and services provided as a direct result of program activities.	# of technical assistance requests responded to; # of compliance workbooks developed/delivered.
Customer Reached	Measure of target population receiving outputs.	% of target population trained; # of target population receiving technical assistance.
Customer Satisfaction	Measure of satisfaction with outputs.	% of customers dissatisfied with training; % of customers “very satisfied” with assistance received.
Outcomes	Accomplishment of program goals and objectives (short-term and intermediate outcomes, long-term outcomes--impacts).	% increase in industry’s understanding of regulatory recycling exclusion; # of sectors that adopt regulatory recycling exclusion; % increase in materials recycled.

Work Quality Measures

Category	Definition	Examples
Efficiency	Measure that relates outputs to costs.	Cost per workbook produced; cost per inspection conducted.
Productivity	Measure of the rate of production per some specific unit of resource (e.g., staff or employee). The focus is on labor productivity.	Number of enforcement cases investigated per inspector.
Cost Effectiveness	Measure that relates outcomes to costs.	Cost per pounds of pollutants reduced; cost per mile of beach cleaned.
Service Quality	Measure of the quality of products and services produced.	Percent of technical assistance requests responded to within one week.

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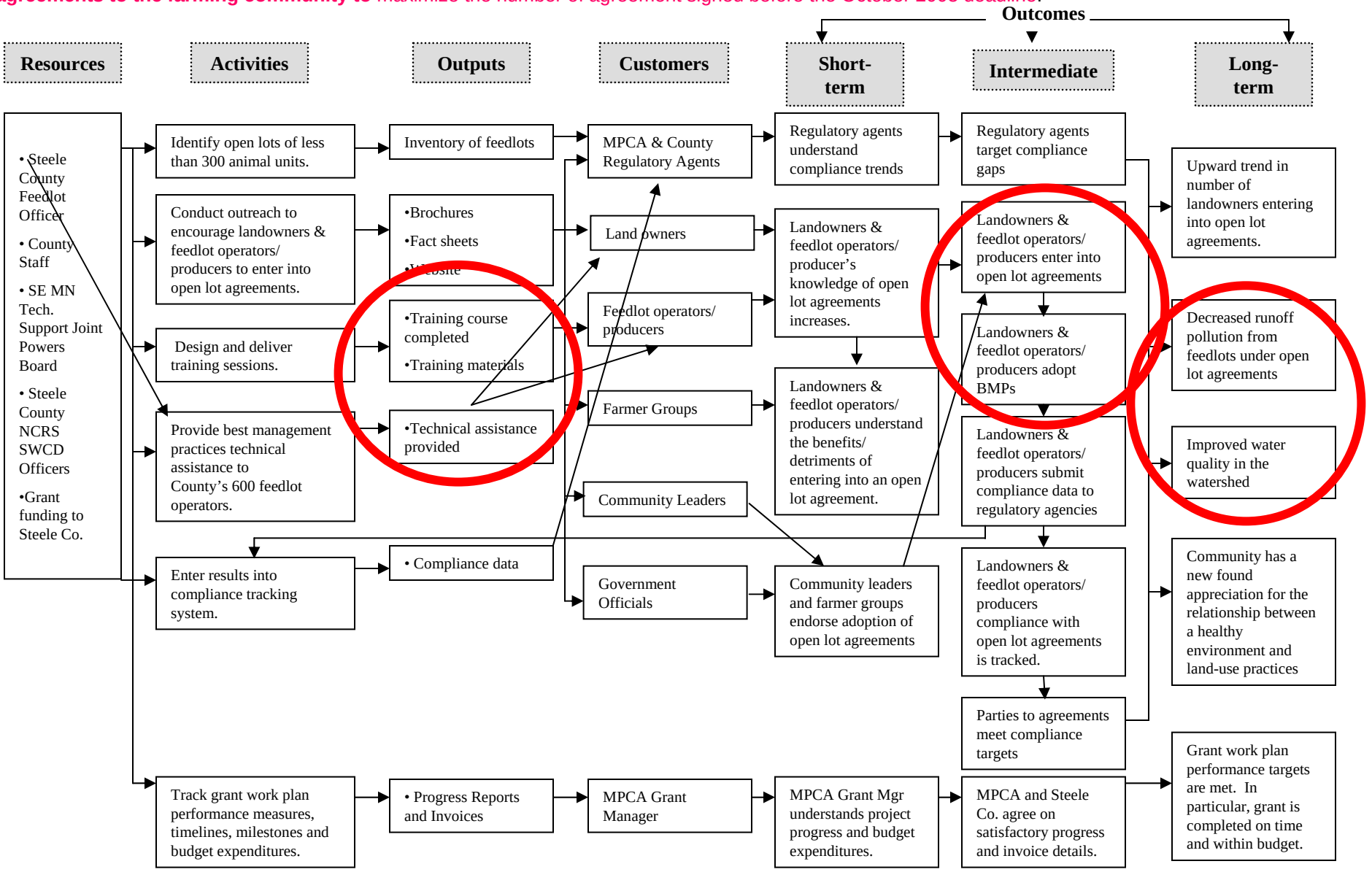


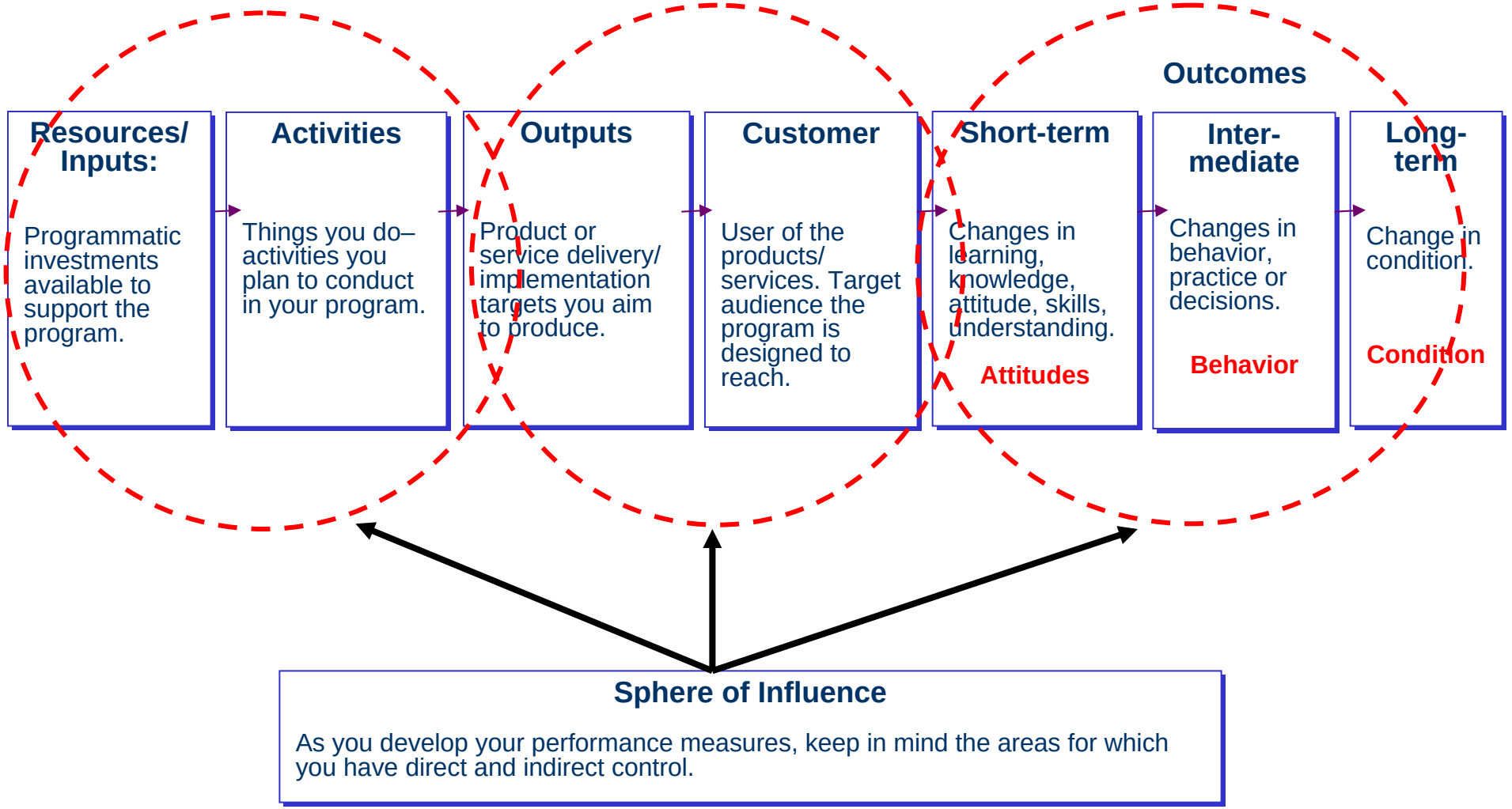
Open Feedlot Agreement Measures

	Resources	Activities	Outputs	Customer reached	Short-term Outcome	Intermediate Outcome	Long-term Outcomes
Logic Model Elements	▪Steele County Feedlot Officer ▪County Staff ▪SE MN Tech. Support Joint Powers Board ▪Steele County NCRS SWCD Officers ▪Grant funding to Steele Co.	▪Identify open lots of less than 300 animal units ▪Conduct outreach to encourage landowners & feedlot operators/ producers to enter into open lot agreements ▪Design and deliver training sessions ▪Provide Tech. Assistance	▪Inventory of feedlots ▪Brochures ▪Fact sheets ▪Website ▪Training courses completed ▪Training materials ▪Technical assistance provided	▪MPCA & County Regulatory Agents ▪Land owners ▪Feedlot operators/ producers ▪Farmer Groups ▪Community leaders ▪Government officials	▪Regulatory agents understand compliance trends ▪Landowners & feedlot operators/ producer's knowledge of open lot agreements increases ▪Landowners & feedlot operators/ producer's understand benefit/detriments of entering into an open lot agreement	▪Landowners & feedlot operators/ producer enter into open lot agreements ▪Landowners & feedlot operators/ producer's adopt BMPs	▪Decreased runoff pollution from feedlots under open lot agreements ▪Improved water quality in the watershed
Example Measures	▪ Total combined in-kind hours contributed by partner organizations	▪# of training courses designed ▪# of trainings delivered	▪# of brochures and fact sheets distributed ▪Number of technical assistance requests responded to	▪# /% of feedlots with < 300 animals contacted ▪Level of satisfaction with technical assistance	**▪#/% of landowners & feedlot operators/ producers reporting increase in knowledge of Open Lot Agreements**	**▪% increase in targeted landowners & feedlot operators/ producers adopting BMPs**	**▪ % decrease in fecal coliform found in the watershed**

Efficiency: Cost per training workshop

Productivity: Hours per technical assistance visit per FTE

Sphere of Influence



Why it Fails…

- Performance measures are
  - Not providing useful information
  - Not measuring the right things
  - Not presenting results in meaningful ways to decision makers
- Performance measure data are
  - Too expensive or time-consuming to collect
  - Poor quality; hard to collect well and consistently
  - Not consistent among reporting entities.

Source: Chapel, T., Center for Disease Control and Prevention, Power Point Presentation, Program Alignment, Performance Measurement, and Program Improvement

Evaluation Questions Across the Performance Spectrum

PROGRAM ELEMENTS:	Resources/ Inputs (We use these)	Activities/ Outputs (To do these things)	Target Customer (For these people)	Short-term Outcome	Intermediate Outcome	Long-Term Outcome
EVALUATION QUESTIONS:	▪Do we have enough, ▪The right, ▪The necessary level, ▪The consistency? Why or why not?	▪Are we doing things the right way we say we should? ▪Are we producing products and services at the levels anticipated? ▪According to anticipated quality indicators? Why or why not	▪Are we reaching the customers targeted? ▪Are we reaching the anticipated numbers? ▪Are they satisfied? Why or why not?	▪Did the customers understanding, knowledge, skills, or attitude change? ▪What evidence do we have that the program caused the changes?	▪Are customers using the information, knowledge, skill, or attitude change as expected? ▪With what results? ▪Are customers served changing behaviors/practices in the expected direction/level? ▪If so, what did we do to cause the behavior change?	▪What changes in condition (Environment) have occurred? ▪Why?
EXTERNAL CONDITIONS:	What factors might influence my program's success?					

Types of Evaluations and Common Evaluation Questions

Type of Activity	Common Evaluation Questions
Evaluability assessment	▪Is the program ready for an outcome or impact evaluation?
Needs assessment	▪What are the dimensions of the problem and the resources available to address it?
Design assessment	▪Is the design of the program well formulated, feasible, and likely to achieve the intended goals?
Process evaluation or implementation assessment	▪Is the program being delivered as intended to the targeted recipients? ▪Is the program well managed? ▪What progress has been made in implementing new provisions?
Outcome evaluation	▪Are desired program outcomes obtained? ▪What role, if any ,did the program play? ▪What role, if any, did the context play? ▪Did the program produce unintended outcomes?
Net impact evaluation	▪Did the program cause the desired impact? ▪Is one approach more effective than another in obtaining the desired outcomes?

Adapted from Evaluation Dialogue Between OMB and Federal Evaluation Leaders: Digging a Bit Deeper into Evaluation Science, April 2005

Quality of the Measures and the Evaluation

The quality of the evaluation is dependent upon the quality of the measures and the Evaluation Design.

- Reliability
  - Provides consistent readings
- Validity
  - Measures what it is supposed to measure
- Objectivity
  - Free from bias and represents reality
- Functional
  - Data collected can be used for improvemnt

Information Collection Requests (ICRs)

- Under the Paperwork Reduction Act, federal agencies must have an OMB-approved Information Collection Request (ICR) to ask for identical information from 10 or more people who are not federal employees.
- An ICR:
  - Describes the information to be collected.
  - Gives the reason the information is needed.
  - Estimates the time and cost for the public to answer the request.
- The ICR process takes at least 9 months.
- EPA's ICR Center: http://intranet.epa.gov/icrintra/index.html

Rapid Feedback Evaluation

- *The phased collection of information about your program*
- Simple, low-cost estimates of –
  - Program implementation
  - Program outcome
  - The role of delivery context.
- A means through which the cost and benefit of *extended* evaluation can be estimated.
- A way to test evaluation methodology.

Characteristics of Rapid Feedback Evaluation

- Narrow scope
- Simpler evaluation methods
- More open process
- Less time
- Lower cost

What Resources are Available?

What Resources are Available?

- Training
  - Logic Modeling, Measurement and Evaluation Train-the-Trainer Course September 18-21, 2006
- Guidance and Advisory Support
  - Program Evaluation Network
  - OPEI's Evaluation Support Division (ESD)
  - OCFO, Office of Planning, Analysis, and Accountability (OPAA)
- Tools and Products
  - ESD Website
  - On-line Evaluation Library
  - Program Evaluation Planning Worksheet
  - PEC Fact sheets
  - Measurement and Evaluation Best Practice Tools

How Can This Training Help Managers and Staff?

- Develop a performance management culture
- Influence identification and development of meaningful performance measures
- Refine State priority measures
- Develop performance management technical assistance resources and trainers

Headquarters, Regional Offices and Others that have Received Training

- HQ Programs/Offices
  - OPEI/NCEI, OHROS, OIA, OPP, OEJ, OSW, OW, RTP
- Regions
  - Training Completed – Regions 2, 3, 4, 5, 6, 7, 8, 9 and 10
  - Training Scheduled – Region 1 (October 2006)
- States
  - Michigan and Minnesota (MPCA)
  - State Innovation Grant Recipients
- Others
  - Small Business Environmental Assistance Programs
  - Tribes

Bridges and Barriers to Measurement and Evaluation

A Successful Measurement & Evaluation Culture:

- Establishes an on-going, resource-supported process for managers to use measurement data and evaluate their programs.
- Engages all program stakeholders in the design, conduct, and interpretation of measurement and evaluation.
  - Ends the perception that measurement and evaluation is being done to me rather than with me!
- Creates a forum in which measurement data and evaluation results can be discussed and integrated into program management
- Recognizes that measurement and evaluation are context-bound!

A Successful Measurement & Evaluation Culture:

- Has an internal champion
- Embraces the diversity of measurement and evaluation
  - Performance monitoring, process, outcome, and impact
- Establishes a compelling need for management & performance information
  - Who has the need for what information and why?

Some of the Constraining Factors

- Electoral cycles and the brief tenure of many political executives
- Stakeholders are more diverse and contentious
- Public managers must carefully build interpersonal networks

Some of the Constraining Factors

- Policy and authority set outside the agency.
- Timeframes for success unrealistically short.
- Standards for successful performance often set by other entities outside the agency.

  (Ring and Perry, 1985)

Contacts:

Yvonne M. Watson
watson.yvonne@epa.gov
(202) 566-2239